LACTATE AS CLINICAL PREDICTOR OUTCOME IN CHILDREN WITH SYSTEMIC INFLAMMATORY RESPONSE SYNDROME

Fitria Rhahmadani, Mayetti, Afriwardi

ABSTRACT

Background. Systemic inflammatory response syndrome (SIRS) is the body's response to the entry of pathogens or toxins into the blood circulation, resulting in disruption of homeostasis and impaired endothelial diffuse that play a role in the occurrence of damage to various organs and tissue hypoxia that would later become severe sepsis, septic shock, and failure of multiple organ that can end up with death. Tissue hypoxia causes an increase levels of lactate in the blood.

Aim. To acknowledge the relationship between lactate and clinical outcome in children with SIRS.

Method. This was a prospective cohort study on 72 children with SIRS at dr. M. Djamil Padang Hospital.

Result. More clinical improvement in patients who had lactate clearance compared with patients who did not have experience lactate clearance, and this difference was statistically significant ($p<0.05$). Patients who had early lactate levels ≥4 mmol/L four times became clinical worsening and five times became shock than patients with early lactate levels <4 mmol/L, the differences were statistically significant ($p<0.05$; RR=4.167; CI=1,95-8,93 and $p<0.05$; RR=5.5; CI=1,311-23,076). All patients who died had early lactate levels ≥4 mmol/L.

Conclusion. Lactate has a role as a predictor of clinical outcome in children with SIRS.

Keyword: *lactate, sepsis, systemic inflammatory response syndrome (SIRS), children.*

LAKTAT SEBAGAI PREDIKTOR LUARAN KLINIS ANAK YANG MENDERITA *SYSTEMIC INFLAMMATORY RESPONSE SYNDROME*

Fitria Rhahmadani, Mayetti, Afriwardi

ABSTRAK

Latar belakang. *Systemic inflammatory response syndrome* (SIRS) merupakan respon tubuh terhadap masuknya patogen atau toksin ke dalam sirkulasi darah, mengakibatkan gangguan homeostasis dan gangguan endotel difus yang berperan dalam terjadinya kerusakan berbagai organ dan hipoksia jaringan global selanjutnya menjadi sepsis berat, syok septik, dan kegagalan multi organ dan dapat berakhir kematian. Hipoksia jaringan global menyebabkan peningkatan kadar laktat di dalam darah.

Tujuan. Mengetahui hubungan laktat terhadap luaran klinis anak yang menderita SIRS.

Metode. Penelitian kohort prospektif terhadap 72 anak menderita SIRS di RS. dr. M. Djamil Padang.

Hasil. Perbaikan klinis lebih banyak pada pasien yang mengalami bersihan laktat dibandingkan yang tidak mengalami bersihan laktat, dengan perbedaan yang bermakna secara statistik ($p<0,05$). Pasien dengan kadar laktat awal ≥4 mmol/L empat kali lebih banyak mengalami perburukan klinis dan lima kali lebih banyak mengalami syok dibandingkan pasien dengan kadar laktat awal <4 mmol/L, dengan perbedaan yang bermakna secara statistik ($p<0,05$; RR=4,167; IK=1,95-8,93 dan $p<0,05$; RR=5,5; IK=1,311-23,076). Semua pasien yang meninggal mempunyai kadar laktat awal ≥4 mmol/L.

Kesimpulan. Laktat memiliki peranan sebagai prediktor luaran klinis pada anak yang menderita SIRS.

Kata kunci. *laktat, sepsis, systemic inflammatory response syndrome (SIRS), anak.*